CLAIMS

1. A communication apparatus for carrying out data communications by allocating data to a plurality of tones, the communication apparatus comprising:

a bit allocation calculating unit which calculates a number of bits that can be allocated to each tone for each communication apparatus that becomes a communication party, at the time of a training for setting initialization information before carrying out data communications; and

a data communication unit which carries out data communications to each communication apparatus that becomes the communication party based on the bit allocation calculated by the bit allocation calculating unit.

2. The communication apparatus according to claim 1, wherein the data communication unit carries out only data transmission.

3. The communication apparatus according to claim 1, wherein the data communication unit carries out only data reception.

4. A communication method of carrying out data communications by allocating data to a plurality of tones, the communication method comprising steps of:

calculating a number of bits that can be allocated to each tone for each communication apparatus that becomes a communication party, at the time of a training for setting initialization information before carrying out data communications; and

carrying out data communications to each communication apparatus that becomes the communication party based on the bit allocation calculated.

5. The communication method according to claim 4, wherein among the communication apparatuses that carry out communications, a communication apparatus that becomes a clock master for transmitting a synchronization signal is set, and the communication apparatuses other than the clock master receive a synchronization signal from the communication apparatus that becomes the clock master, and carry out synchronization.

6. The communication method according to claim 5, wherein the plurality of tones having the same bandwidth are used.

7. The communication method according to claim 4, wherein the communication apparatuses are managed by dividing them into masters and slaves.

8. The communication method according to claim 7, wherein among the communication apparatuses that carry out communications, a communication apparatus that becomes a clock master for transmitting a synchronization signal is set, and the communication apparatuses other than the clock master receive a synchronization signal from the communication apparatus that becomes the clock master, and carry out synchronization.

9. The communication method according to claim 8, wherein the plurality of tones having the same bandwidth are used.